

**Parasitic Flies of the Genera *Helioprosopa*
and *Euhelioprosopa*¹**

(Diptera : Tachinidae)

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The genus *Helioprosopa* was described by Townsend in 1926 with *facialis* as the type by original designation (Gen. Musc. Hum. Trop. Am., 239). The latter citation is in Portuguese and in the form of abbreviation symbols difficult of interpretation. However, a redescription of the genus by its author in 1939 makes it more readily recognizable without access to the type series, which is from Brazil (Manual of Myiology, Part VIII, 195).

Hitherto the genus here under consideration has not been referred to in either taxonomic or economic literature citing information regarding host relationships. During recent years materials received for identification have brought to light six additional undescribed, apparently congeneric, species and a closely allied new genus. All are included in the accompanying key and described on following pages. The new species are represented by limited series from Mexico, Colombia, Brazil, and Chile. This wide range of the known species indicates that perhaps members of the genus may prove quite common in the Neotropical fauna.

I am indebted to Dr. Paul H. Arnaud, Jr., for the loan of pertinent material and all types based upon the latter are returned to the California Academy of Sciences Collection.

GENUS HELIOPROSOPA Townsend

Helioprosopa includes smallish to average-sized cuphocerine flies of fairly compact build. With few exceptions the present known forms are basically black in color with apex of abdomen more or less reddish. The peculiar or more distinctive generic characters may be summarized briefly as follows:

Head with ocellar bristles and palpi absent; parafacial setose with one or more facioorbitals below; epistoma nasutely produced; second antennal segment normally at least one-half length of third; arista micropubescent, thickened to near tip, penultimate segment elongated, the proximal usually short; cheek over one-half eye length; *propleura* bare; *wing* gray hyaline to strongly infuscated; first vein bare, third setulose to or nearly to small cross vein; last section of fifth vein two-fifths or more length of preceding; first posterior cell open well before wing tip; calypters

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large, hind lobe transverse; *abdomen* with intermediate segments usually without discals; sternites exposed and bristled.

The remaining characters which apply in common to the species here under consideration are cited below for convenient reference and avoidance of repetitious details under the accompanying descriptions.

Head squared below, two-thirds to three-fourths wider than high, frontal profile shorter to subequal concave facial, antennal axis near to slightly below eye middle and obviously shorter than oral; clypeus flush and transversely convex; vibrissae decussate on oral margin; facialia flattened, at most two bristles and setae next to vibrissae; haustellum-labella length normally under head height; frontal rows doubled in male reaching to middle of second antennal segment; two large proclinate orbitals in female and two equally large verticals in both sexes, inner pair decussate; eye bare, its lower margin far short of vibrissal level; occiput convex and moderately produced behind oral cavity, clothed with pale pile and margined above with a single row of postocular cilia.

Thoracic chaetotaxy: humeral 4-5; posthumeral 2; notopleural 2; presutural 2; supraalar 3; intraalar 2 or 3 (anterior one sometimes absent); dorsocentral 3, 3; acrostichal 2, 3; postalar 2; sternopleural 3; pteropleural doubled (largest equal to sternopleural); scutellum with two strong lateral (which reach beyond base of third abdominal segment); 1 good-sized decussate apical and 1 appressed discal pair; prosternum and postnotal slope bare. *Legs* of male with claws and pulvilli normally subequal to length of last tarsal segment, shorter in female; latter with simple or unmodified foretarsi. *Wing* reaching beyond apex of abdomen; hind cross vein oblique in plane of apical and one-third or more its length from rectangular cubitulus, which bears a short stump or fold about two-fifths wing width from hind margin; costal spine vestigial.

Abdomen ovate, as wide as thorax in male but wider than same in female; one pair median marginals on segment two, a marginal row and at times weak discals on three, one row of small marginals and one or more rows of stronger discals on segment four; female genitalia without piercer.

KEY TO SPECIES OF HELIOPROSOPA AND EUHELIOPROSOPA

1. Propleura bare, ocellars absent *Helioprosopa* Townsend, 2
 Propleura setose, ocellars present *Euhelioprosopa pactilis*, n. gen. et n. sp.
2. Calypters white to tawny or yellow 3
 Calypters black 6
3. Cheeks and parafacials black-haired 4
 Cheek and parafacial vestiture golden; abdomen rusty yellow, with discals
 on intermediate segments; parafrontal vestiture black, female only (Colom-
 bia) *aurifodina*, n. sp.
4. Notal vittae broad and well defined to scutellar base 5
 Notum subshining, vittae barely visible before and wholly obliterated behind
 suture; parafrontals black and sharply delimited from pale or reddish para-
 facials at level of lower frontals; antennae red; claws and pulvilli shorter than
 apical tarsal segment (Mexico) *electilis*, n. sp.
5. Parafacials silvery on infuscated background, bearing three facioorbitals and
 a vestiture of longish black hairs on outer half of entire length; sternopleura

- black-haired, male only (Chile) *finita*, n. sp.
 Parafacials overlaid with heavy golden pollen on pale background, bearing one facioorbital and clothed with shorter sparser black hairs; sternopleura in male pale-haired on lower half (Brazil) *facialis* Townsend
6. Abdomen and legs predominantly black 7
 Abdomen and legs except tarsi reddish yellow; parafacials subsilvery, sparsely microsetose on outer margin; third antennal segment entirely black, uncommonly broad and long, female only (Colombia) *macrocera*, n. sp.
7. Abdomen polished black, anal segment red-tipped and tawny pollinose on basal half at sides, hairs on upper surface of intermedian segments short and appressed; clypeus and epistoma silvery on pale ground color (Mexico, Colombia) *liciata*, n. sp.
 Abdomen opaque black with shiny rounded areas surrounding bases of all macrochaetae, without any pale pollen, hairs on upper surface long and erect; clypeus and epistoma blackish in ground color, female only (Colombia)
 *veleda*, n. sp.

***Helioprosopa aurifodina* Reinhard, new species**

A wholly reddish-yellow species with concolorous legs and tawny calyp-
 ters.

FEMALE.—*Head* with dense old gold pollen on a wholly pale background; front at vertex 0.36 of head width, diverging rapidly into facial angle; frontalia narrowed upwards, exceeding width of parafrontal; frontal row single, two bristles below antennal base; three proclinate frontoorbitals and one facioorbital; antenna red, third segment largely infuscated and barely over length of second; brownish arista pubescent to tip; cheek three-fifths eye length; haustellum moderately slender but under head height; occiput slightly darkened on lateral margin above, clothed with golden pile.

Thorax largely pale in ground color, notum darker and dusted with opaque gold pollen and indistinctly vittate; scutellum wholly red, bearing strong lateral bristles and with erect black hairs on disc, no well-differentiated discals. *Wing* largely gray hyaline but with a yellow tinge costobasally; veins reddish yellow, third setose to small cross vein; hind cross vein less than half its length from V-shaped stumpless cubitulus; last section of fifth vein well under one-half length of preceding section; epaulet, subepaulet, and halteres pale red to yellow. *Legs* strongly black-bristled; yellow, black-tipped claws and pale pulvilli shorter than last tarsal segment; foretarsus stout, unmodified.

Abdomen rusty yellow with an elongate black macula along median line on anal segment, entire upper surface opaque without pollen and semitranslucent basally at sides and on venter; one pair of discals on segments two and three besides a complete marginal row on latter; anal segment bearing three irregular discal rows and a marginal row reduced to small hairs at middle above; blunt-tipped genitalia black and closely retracted within tip of abdomen; sternites exposed and well bristled.

MALE unknown.

Length, 9.5–11 mm.

Holotype female.—6 MILES WEST OF CALI VALLE, COLOMBIA, 1,630 m,

20 March 1955 (E. I. Schlinger and E. S. Ross). Paratypes: 3 females, same data as type, all in the California Academy of Sciences Collection.

***Helioprosopa electilis* Reinhard, new species**

MALE.—*Head* basically bicolored, occiput and parafrontals black, face including sides and cheeks contrasting red, thin, whitish pollen sheen on front becoming denser and more lustrous on parafacials and cheeks; frontalia red, not equal parafrontal width at mid front level; front at vertex 0.41 of head width; frontals descending about to apex level of second antennal segment; third antennal segment suborbicular infuscated on narrow outer margin, one and one-half times length of second; black pubescent arista thickened to near apex, penultimate segment two or three times longer than thick; haustellum slender but well under head height; cheek four-fifths eye length, sparsely beset with black bristly hairs; occiput clothed with white pile.

Thorax and scutellum bluish black with feebly shining surface lightly dusted with rather uniform gray pollen which in favorable light shows four vague, dark dorsal vittae; chaetotaxy as cited above, but with only one pair of postacrostichals (pre-scutellars) well developed. *Wing* grayish hyaline; veins brown, third setulose to small cross vein; bisinuate hind cross vein three-fifths its length from rectangular cubitus; last section of fifth vein a little under one-half length of preceding; epaulet rufous, subepaulet paler reddish yellow. *Legs* black, tibiae more or less rufous; claws and pulvilli shorter than last tarsal segment.

Abdomen black, apex red, last three segments above with thin, patternless gray pollen extending thinly to or near hind margin of each; marginal row of bristles on third segment incomplete, main discal row on anal segment strongly arcuate along line of color demarcation; genital forceps wholly yellow, fused base obviously wider than long and black-haired behind, tapered apical part sharply recurved; accessory process with only the narrow polished tip visible in profile; fifth sternite lobes beset with long black bristly hairs.

FEMALE.—Vertex 0.40 of head width; antenna wholly red, third segment longer than broad; anal orifice caudoventral, rounded posteriorly and strongly tapered cephalad, blunt-tipped genitalia retracted. Other details as in male.

Length, 6.5 mm.

Holotype male and allotype female: COLIMA, COL., MEXICO, 27 March 1934.

***Helioprosopa macrocera* Reinhard, new species**

The bicolored habitus and large antennae readily distinguish this species from its congeners.

FEMALE.—*Head* with face, including sides and cheeks, silvery white on pale ground color, parafrontals contrasting black lightly dusted with pale pollen and clothed with fine, short black hairs; frontalia velvety black, about one-third parafrontal width; frontal vertex 0.41 of head width; antenna subequal length of face, third segment wider than length of second and nearly five times longer than same; arista pubescent and thickened to near tip, second segment about three times longer than thick; shining brown hard-textured proboscis barely one-half head height; cheek three-

fourths eye length, sparsely clothed with fine, short black hairs; occiput cinereous on dark background, with a moderately dense vestiture of white pile.

Thorax black, gray pollinose, notum marked by four slender, black vittae, inner pair obsolete shortly behind suture, scutellum wholly red with two strong laterals and no discals. *Wing* brownish to black with narrow hind margin slightly paler; hind cross vein four-fifths its length from cubitulus; last section of fifth vein slightly over one-third preceding section; veins black, third setulose nearly to small cross vein; epaulet and subepaulet reddish; calypters black. *Legs* red, tarsi black; mid tibia with six anterodorsal bristles of unequal size; foretarsus stout but not noticeably dilated; red, black-tipped claws short.

Abdomen red, last three segments black maculate medianly above on basal half (less on anal), surface without pollen and feebly shiny; marginal row on third segment complete and two discal rows of anal; genitalia retracted with blunt tip of apical segment briefly exposed; sternites more widely exposed than in allied forms. MALE unknown.

Length, 10.5 mm.

Holotype female: COLOMBIA, SOUTH AMERICA, without specified locality or collector. An ancient but well-preserved specimen received for identification bearing a single, hand-written label "11302."

***Helioprosopa finita* Reinhard, new species**

MALE.—Front at vertex 0.43 of head width; parafacials and parafrontals concolorous black; third antennal segment subtriangular and strongly convex on front margin from base to lower apical extremity; arista thickened to tapered tip, first segment more elongated than usual and subequal to length of second; cheek three-fourths eye length, clothed with only weak bristly hairs.

Thoracic chaetotaxy as in *H. facialis* except front intraalar bristle lacking in the one available specimen. *Wing* subhyaline, veins including costa reddish; hind cross vein one-half its length from cubitulus; epaulet black. *Legs* black, claws and pulvilli fully equal to length of last tarsal segment.

Abdomen black sides of intermediate segments rufous and apical half of fourth orange red, each with silvery pollen above on basal half or less; hypopigium small, retracted in repose; genital forceps as broad as long on basal half or more, thence suddenly reduced to a narrow acute-tipped beak, hind surface of base punctate and rather thickly clothed with long, fine, black hairs; free part of accessory process shining brown, recurved and subpointed at apex; fourth sternite black, devoid of bristles, fifth with a median U-shaped excision, black lobes bristled. FEMALE unknown.

Length, 10 mm.

Holotype male: CHILE, COQ. 5 MILES NORTH OF LAGUNA DAM, 8,000 feet, 6 December 1950, Ross and Michelbacher, in the California Academy of Sciences Collection.

***Helioprosopa velda* Reinhard, new species**

An opaque velvety black species in which all abdominal macrochaetae, including discals on intermediate segments, are surrounded at base by

small, rounded, polished areas, which are apparent only under magnification.

FEMALE.—*Head* black in ground color, cheek, face, and parafacial gray to silvery, parafrontal deep black and subshiny with a pruinose sheen apparent in most views; red frontalia narrowed upwards and becoming blackish before vertex, about three-fifths parafrontal width at mid front level; frontal row extending two bristles below antennal base; front at vertex 0.43 of head width; antenna black rather slender, third segment nearly twice length of second; black arista pubescent, moderately thickened and tapered to near tip, second segment three or four times longer than wide; parafacial black-haired with one strong facioorbital below; eye bare, reaching a little short of vibrissal level; cheek one-half eye length, sparsely clothed with fine black hairs; haustellum slender and well over head height; occiput pale pilose.

Thorax grayish pollinose before and immediately behind suture, remainder of notum including scutellum without any pale pollen. *Wing* smoky to black near base; veins reddish brown, third setulose halfway or more to small cross vein; last section of fifth vein barely two-fifths length of preceding; hind cross vein slightly over one-third its length from rectangular cubitulus, which bears a short fold in membrane; halteres, epaulet, subepaulet, and calypters jet black. *Legs* black, tibiae more or less reddish and strongly bristled; foretarsus simple; claws and pulvilli shorter than last tarsal segment.

Abdomen broadly ovate and wider than thorax, clothed with longish, erect, black hairs on entire upper surface with stout discals on each intermediate segment and three or more irregular discal rows on last; a marginal row of 12 to 14 large, erect bristles on segments two and three; genitalia retracted, terminating in a blunt-tipped ovipositor; sternites exposed and well bristled. **MALE** unknown.

Length, 9.5 mm.

Holotype female: FUSAGASUGA, CUNDINAMARCA, COLOMBIA, SOUTH AMERICA, 10 September 1943 (H. Osorno).

HELIOPROSOPA FACIALIS Townsend

Helioprosopa facialis Townsend, 1926, Gen. Musc. Hum. Trop. Amer., p. 239.

Townsend, 1939, Manual of Myiology, Part VIII, p. 195.

MALE.—The principal distinctive color items are cited in the accompanying key; *head* with antennal segments one and two orange red, third contrasting black, nearly as wide as long and gently convex on anterior margin; arista black with second segment scarcely over twice length of first; cheek one-half to three-fifths eye length, front at vertex 0.38 and at lunule 0.51 of head width; postocellars well developed; haustellum–labella length about three-fourths head height.

Thorax and scutellum black, dusted with gray pollen, notum marked with four broad, well-defined subshiny black vittae. *Wing* gray hyaline, veins brown, third setulose to small cross vein; last section of fifth vein one-half length of preceding; calypters opaque white; epaulet red, subepaulet pallid. *Legs* black, tibiae somewhat reddish and strongly bristled.

Abdomen black, apical half of anal segment orange red; three proximal segments dusted with changeable silvery pollen on basal margin above but denser and less lustrous on venter of each; hairs on upper surface appressed; hypopygium small

and retracted; fourth sternite red, devoid of any vestiture, fifth black, with a deep median excision, lobes clothed with black bristly hairs.

FEMALE.—Front at vertex 0.37 of head width; two proclinate orbitals; third antennal segment over twice as long as wide; cheek nearly three-fifths eye length; foretarsus with intermediate segments flattened and distinctly widened; claws and pulvilli short.

Length, 7.5–11.5 mm.

Redescribed from four males and four females in Dr. Paul Arnaud's collection, all labeled Nova Teutonia, Brazil, January to December 1958–1959 (Fritz Plaumann); and 1 male, same data, except dated 8 May 1952. The latter specimen was compared with the type in the U. S. National Museum.

***Helioprosopa liciata* Reinhard, new species**

MALE.—*Head* with parafrontals bluish black, thinly pale pollinose and clothed with a vestiture of long, erect, black hairs; frontalia opaque brown, scarcely one-half of parafrontal width; front at vertex 0.39 of head width; antenna black, apex of second base of third segment reddish on inner face, latter approximating twice length of second; pubescent black arista thickened on basal three-fifths, with penultimate segment elongated; cheek nearly three-fifths eye length; slender, shining brown haustellum over one-half head height; occiput cinereous on dark background clothed with dense white pile.

Thorax and scutellum shining black, lightly sprinkled with whitish pollen appearing densest in a flat rear view; notum showing four faintly marked vittae and clothed with a vestiture of fine, black, erect hairs. *Wing* smoky, veins yellow to brown, third setose halfway to small cross vein; last section of fifth vein barely one-third length of preceding; hind cross vein two-fifths its length from cubitulus; latter without any appendage, epaulet black, subepaulet orange red. *Legs* black, strongly bristled; claws and pulvilli subequal to last tarsal segment.

Abdomen ovate, broader and longer than thorax, genitalia similar to *H. finita* but the fused base of forceps narrower and accessory process largely concealed by the convex orange-red side of second genital segment; sternites narrowly exposed and bristled except fourth, lobes of fifth sternite clothed with fine black hairs.

FEMALE.—Front at vertex 0.39 of head width; third antennal segment narrower and straight on front margin; claws and pulvilli shorter than apical tarsal segment, anal orifice broadly ovate, genitalia retracted.

Length, 8.5–9 mm.

Holotype male: "7 MILES NORTHEAST OF JACALA, HIDALGO, MEXICO, 27 July 1954," no collector's label. *Allotype female*: Fusagasuga, Cundinamarca, Colombia, South America, 10 September 1943 (H. Osorno).

***Euhelioprosopa* Reinhard, new genus**

This genus, based upon the type species *E. pactilis* described below, closely approximates the habitus of *Helioprosopa* (type, *facialis* Tns.),

but differs in the pertinent characters cited in the accompanying key and in others listed in the following description.

***Euhelioprosopa pactilis* Reinhard, new species**

MALE.—*Head* with parafacials, clypeus, and cheeks yellow pollinose on pale background; parafrontals subshiny black, lightly sprinkled with pale pollen; front strongly narrowed toward vertex which measures 0.30 of head width; frontalia concolorous with parafrontal and narrower than same; frontal rows doubled on widest part of front, three or four bristles below antennal base; proclinate ocellars equal to size of average frontal; parafacials black-haired along narrow outer margin and bearing two strong facioorbitals; cheek one-half eye length; third antennal segment black, strongly arched on front edge from base to apex and one-fourth longer than second; penultimate arisal segment one-fourth length of third; occiput with a ruff of pale yellowish white pile.

Thorax marked above with complete black vittae, scutellum concolorous. *Wing* slightly infuscated; third vein with three or four setulae near base; last section of fifth vein about one-third length of preceding; calypters pale; epaulet blackish and sharply contrasted with subepaulet. *Legs* wholly black; mid tibia with three unequal anterodorsal bristles; claws and pulvilli subequal to last tarsal segment.

Abdomen black, apex orange red; one pair of median discals on intermediate segments and three irregular rows of discals on anal; hypopygium largely retracted in repose, fused forceps strongly compressed, arched in profile and scarcely narrowed apically, bluntly rounded on apex; accessory process extending briefly forward from thick base thence sharply recurved and tapered to a narrow black-polished apex; fifth sternite black, lobes clothed with whitish pubescence and scattered black hairs. **FEMALE** unknown.

Length, 9 mm.

Holotype male: “Chile: 50 KILOMETERS SOUTH OF LASORENA, 2 December 1950, Ross and Michelbacher,” in the California Academy of Sciences Collection.

MEETING ANNOUNCEMENT

The annual meeting of the Pacific Branch of the Entomological Society of America will be held 15–18 June 1964 at the Edgewater Inn, Marina Hotel, Long Beach, California. Among the topics to be presented are symposia on food selection by insects and on insect pheromones.